Quality Advancement in Nursing Education - Avancées en formation infirmière

Volume 4 | Issue 2 Article 7

The Pedagogical Practices of Clinical Nurse Educators - Les pratiques pédagogiques des infirmières formatrices cliniques

Anita Jennings
George Brown College of Applied Arts and Technology, ajenning@georgebrown.ca

Clare Brett
University of Toronto, clare.brett@utoronto.ca

Recommended Citation

Jennings, Anita and Brett, Clare (2018) "The Pedagogical Practices of Clinical Nurse Educators - Les pratiques pédagogiques des infirmières formatrices cliniques," *Quality Advancement in Nursing Education - Avancées en formation infirmière*: Vol. 4: Iss. 2, Article 7.
DOI: https://doi.org/10.17483/2368-6669.1142

Introduction

The purpose of undergraduate nursing education is to prepare nursing students to think critically and to act safely and independently (Fowler, 1996; Lofmark, Carlsson, & Wikblad, 2001; Lofmark & Wikblad, 2001). Undergraduate nursing curricula consist of theoretical and practical components and, in the practice courses, nursing students learn to care for individuals of diverse ages and in a variety of clinical settings. Students learn about maintaining the health and wellness of individuals and how to care for them in the context of both health and illness. In addition, nursing students enroll in electives in liberal arts in order to diversify their knowledge and ways of thinking in their development as a professional.

The purpose of a practicum is to enable students to integrate concepts taught in the classroom into actual practice and to familiarize themselves with the practice environments, thereby enabling them to become practitioners of nursing (Bourgeois, Drayton, & Brown, 2011; Franklin, 2013). As students progress through the four years in a traditional undergraduate nursing program, they learn to care for patients with increasing acuity as they gain a better understanding of the complexity of the many diseases and conditions that they encounter.

Nursing as a professional discipline involves teaching substantial amounts of theoretical information so that students can effectively care for their patients. Nursing education in the clinical arena includes integrating theoretical concepts into practice, the application of that knowledge, the experiential conceptualization of knowledge (Shulman, 1998, 2005), and ongoing socialization into the profession. Knowledge application in the clinical arena encompasses procedural, embodied, and experiential knowledge. For instance, when a student performs a skill such as a nasogastric insertion (tube insertion through the nose) for the first time, they use procedural knowledge. As the student continues to perform the skill over time, they begin to rely on their sense of touch and feel of a successful tube insertion. Knowledge of a successful tube insertion includes cognitive knowledge as well as experientially grounded knowledge of the body. Experiential knowledge involves drawing upon experiences that have personal reality and meaning for the learner. The student nurse draws upon their personal learning from their clinical experience and builds upon this knowledge and understanding of nursing practice. The experience increasingly informs learning and impacts the fluency and effectiveness of the student's practice.

This article (2017) highlights one of the main results that emerged from the data so as to demonstrate the various forms of intersecting knowledge that seasoned clinical nurse educators bring to their teaching practice and the complex decision-making process that they engage in on a consistent basis in their teaching practice. Also, the results highlight that clinical nurse educators contribute in significant ways to student learning and pedagogy in nursing education.

Literature Review

Clinical supervision[1] is an essential element in nursing education, as it enables learners to consolidate their knowledge and facilitate professional growth (Fowler, 1996; Franklin, 2013; Pauling, 2006; Severinsson, 1995). In nursing, supervision is defined as a "formal process of professional support and learning which enables individual practitioners to develop knowledge

[1] The terms "clinical supervision" and "clinical instruction" are used interchangeably in practice and in the literature. In this article the authors use the term "clinical instruction." Also, this definition closely resembles the definition adopted by Canadian nursing regulatory bodies and identifies expectations and accountabilities of a clinical educator.

and competence, assume responsibility for their practice, and enhance consumer protection and safety of care in complex clinical situations" (Lyth, 2000, p. 15).

The clinical nurse educator in most cases is a seasoned nurse with knowledge and expertise in clinical or administrative nursing (Fowler, 1996; Severinsson, 1995). Clinical teaching is embedded in a complex mixture of knowledge, practice, and institutionalized expectation and responsibility (Ewashen & Lane, 2007). Some of the main functions of a clinical nurse educator's role are as follows: to guide students in integrating theoretical concepts in practice; to guide students in planning care for the patient; to instruct students in learning skills and procedures; and to engage students to critically think about their nursing practice in planning how they care for their patients.

Benner, Sutphen, Leonard, and Day's study (2010) provided a broad review of the teaching and student learning in nursing education. The researchers conducted a study of nine nursing schools in the United States and observed nurse educators while they were teaching in the classroom and in the clinical arena. They noted a sharp contrast in pedagogical practices between classroom teachers and clinical nurse instructors:

> Teachers in the classroom often rely heavily on automated presentation software and use pedagogical strategies that are significantly less effective than teachers generally use in the clinical setting and skills lab, where knowledge acquisition and use are more integrated. (p. 65)

Classroom nurse educators tended to use a more traditional approach to instruction whereas clinical nurse educators tended to use a situated pedagogical approach linking knowledge and practice.

On examining the learning experiences of nursing students, Benner and colleagues (2010) found that

> students do not fail to notice the sharp divide between the pedagogies of the classroom and the effective pedagogies of situated teaching in the clinical setting, and they find this divide perplexing not only because they learn so well in one arena and struggle to learn in the another, but because the classroom experience is at odds with the strong ethos that results in deep commitment to professional values (and… deep personal transformation). (p. 14)

This excerpt uncovers a contrast in the pedagogical practices of nurse educators teaching in the classroom and nurse educators teaching in the clinical arena. Also, they found that nursing students tend to learn more deeply when nurse educators use a situated pedagogical approach compared to a traditional Tylerian approach.

While this study provided a much-needed general analysis of teaching practices in nursing education, the authors found certain areas needed more examination, specifically a more detailed study of pedagogical practices of clinical nurse educators and their decision-making process.

The authors have used the term *pedagogy* to describe the teaching practice of the participants. Historically, pedagogy has been described as the teaching of children (Harden, 1996; Pew, 2007). However, the validity and value of this distinction continue to be debated, and the assumptions about how to teach children have changed radically from when this term was first introduced. Currently, pedagogy is defined more comprehensively and not only by age.

Some education theorists define pedagogy as the art and science of teaching, while others focus on the relationships between learning and teaching as interdependent elements (McKeon & Harrison, 2010). Others define pedagogy as the relationship between the nature of knowledge, what and how it is taught, and learning (Diekelmann, 2004; Horsfall, Cleary, & Hunt, 2012; Ironside, 2004, 2015; Mitchell, Jonas-Simpson, & Cross, 2012). Pedagogy is also understood as the transformation of consciousness that takes place at the intersection of three agencies: the teacher, the learner, and the knowledge that they produce together (Harden, 1996). Pedagogy is understood as both the visible and the hidden interactions between student and teacher that are oriented towards learning (Shudak, 2014). With the current understanding of learning as a constructive process engaged in by the learner, the way teaching is understood and implemented has changed. As learner-focused considerations became central, how something is taught—*pedagogical knowledge*—becomes the mediating process between the learner and the subject matter content. Participants' understanding of pedagogy emerged as an important result and is explicated in the latter section of this article.

Methods

The purpose of this study was twofold: to theorize the pedagogical practices of clinical nurse educators, and to explore their understanding and expression of the challenges that they encountered while teaching in the clinical arena. To investigate these issues, the authors utilized a grounded theory methodology to better allow the investigation of situations where there is little understanding of an issue (Denzin & Lincoln, 2011; Goulding, 1998; Mills, Bonner, & Francis, 2006b).

The two research questions guiding this study were as follows:

1. How do clinical nurse educators approach teaching undergraduate nursing students in the clinical arena?
2. What challenges do clinical nurse educators encounter while instructing undergraduate nursing students in the clinical arena?

In this article, the authors provide one result from the data as it relates to the first question.

Study Design

The grounded theory approach forwarded by Charmaz (2010, 2011) was utilized in the study design and analysis as it subscribes to both a constructivist and a critical lens, which was particularly suitable to investigate clinical nurse educators' own characterization of their teaching practice. Furthermore, using a constructivist lens in both research design and analysis adds coherence to the results.

Grounded theory methodology focuses on the systematic generation of a theory drawn from analysis of data that documents the meanings of events and interactions of individuals and the language they use to convey those meanings (Annells, 1996; Corbin & Strauss, 2008, 2015; Charmaz, 2010, 2011; Denzin & Lincoln, 2011; Glaser, 2002; Glaser & Strauss, 2005; Mills, Bonner, & Francis, 2006a; Mills et al., 2006b; Punch, 2009). Using this method, researchers move beyond the individualist, person-by-person experiences to enable the researcher to develop a theoretical explanation of a process or practice at a broader conceptual level using the emergent data. *The Pedagogical Practices* of clinical nurse educators emerged as the central theory in this study and encompasses the four main concepts that arose from the data. The forms of knowledge

that clinical nurse educator participants brought to their teaching practice developed as one important concept.

Ethical Consideration

The study received ethics approval from the ethics boards of the participating institutions. Informed consent was obtained before and throughout the data collection process. Confidentiality and privacy continue to be maintained through the dissemination of these research findings when presenting papers at conferences and publishing written articles.

Data Collection and Analysis Methods

Data sources in this study included taped interviews, transcripts, memos, and field notes. Interviews play a central role in collecting data in grounded theory or in studies that use interpretive paradigms (Creswell, 2007; Rowley, 2012).

The authors conducted two rounds of interviews with each participant and the purpose of doing so was twofold. In the first interview, the authors asked broad questions to elicit information about the problem being investigated; in the second interview, the authors delved more deeply into specific issues raised earlier by the individual participants, sought clarification on some categories that she did not fully understand, and checked the accuracy of the meaning of the excerpts with the participant (member-checking). From these interview transcripts, the authors made comparisons within the data, developed and populated categories, and checked for robustness of emerging concepts amongst the various participants using a constant comparison method.

The authors used an interactive, comparative, and iterative process. In this method the researcher goes back and forth between data collection and analysis iteratively, as each informs and advances the other (Charmaz, 2010; Denzin & Lincoln, 2011; Glaser, 2014; Glaser & Strauss, 2005; Hall & Callery, 2001; Mills et al., 2006a, 2006b; Punch, 2009).

The interviews were semi-structured in nature and included both open- and close-ended questions. Open-ended questions enabled the participants to respond in their own words thereby giving voice to their experiences, which enabled the authors to collect and describe the data using *thick* description (Charmaz, 2010). The close-ended questions focused mainly on demographic data and important issues that emerged from the previous interviews. After interviewing the fifth participant, the authors began examining the data for emerging concepts. The authors used focused, axial, and theoretical coding (Charmaz, 2011; Corbin & Strauss, 2015) to develop the emerging concepts.

Rigour

The authors considered criteria for both methodological and interpretive rigour. Glaser and Strauss emphasize *methodological rigour* (as cited in Cooney, 2011), whereas other grounded theorists such as Charmaz (2010) emphasize the importance of *interpretive rigour.* Methodological rigour relates to how closely investigators adhere to the techniques or methods used in the particular research process, whereas interpretive rigour "emphasizes the trustworthiness of the interpretation made… attention is paid to the analytic process, how researchers draw their conclusions and the extent to which conclusions are grounded in the data" (Cooney, 2011, p. 18). In addition, some researchers (Corbin & Strauss, 2008, as cited in Cooney, 2011; Elliott & Lazenbatt, 2005; Sandelowski, 1993; Whittemore, Chase, & Mandle, 2001) suggest investigators consider both adherence to methodology and interpretation of

findings in their results to ensure rigour in the study. In this study, methods such as constant comparison and theoretical sampling were used to ensure methodological rigour. Also, the authors provided a thick and rich description from the data and engaged in memoing and reflexivity to ensure interpretive rigour.

Participants

The authors recruited participants who were primarily involved in teaching in the clinical arena. A total of 13 participants were selected; one participant withdrew during the first interview for personal reasons, leaving 12 who participated in the two rounds of interviews.

All participants had obtained graduate degrees, reflecting the required education qualifications of current clinical nurse educators hired in most undergraduate nursing programs in Toronto, Canada. Four participants had graduate degrees in education, and eight participants had graduate degrees in nursing. All but one of the 12 participants were hired on a part-time or contract sessional basis; 11 participants taught throughout the academic year; one taught part of the time in the winter term only; and some also taught throughout the calendar year. Eight participants taught in two to three different schools of nursing, while the remaining four taught in one school of nursing. The employment experiences of these participants reflect the current employment situation of clinical nurse educators hired to teach in most undergraduate nursing programs. Eight participants taught in the clinical arena from six to fourteen years and these participants possessed specific characteristics that complemented their teaching experiences (Jennings, 2017). The remaining four participants taught in the clinical arena from three to nine years.

Results

The results revealed that clinical nurse educators need to possess in-depth and current knowledge of nursing practice and pedagogy to accurately assess both patient and student, make appropriate decisions, plan and organize their time efficiently so as to spend adequate time with each student, and ensure that that each student has the opportunity to learn, practice, and integrate new knowledge in the clinical arena, all in a timely manner. In this section, the authors focus on one result, participants' *Pedagogical Knowledge of Instruction*.

Pedagogical knowledge represents the participants' experiences, thoughts, and viewpoints and the authors' interpretation of the meaning expressed through the words or actions of the participants (Charmaz, 2010; Corbin & Strauss, 2015). Pedagogical knowledge includes the *instructional activities* of the participants and *knowledge in action*. This latter concept is revealed in the reasoning and decision-making of the participants and is further explained in the "Discussion" section.

Instructional Activities

Karin explained how she assessed a students' knowledge of the medication and the patient's condition:

> We talked about the same meds day after day—Lasix, beta-blockers, every day—and she would forget to tell me the patient's heart rate, or monitor the heart rate, or the reason the patient was on a drug. The next day she would still not know. The next week we had to review it again. I sat with her and told her you need to know this. I said tell me how you learn it. Tell me what system works for you.

Karin hoped to understand how best to guide the student in her learning about how medications act, linking that knowledge with an understanding of the patient's condition. The scenario reveals Karin's thought process that guided her in her assessment of the student and in her teaching interventions. Also, this excerpt illustrates Karin's contribution to student learning. Further, this scenario reveals Karin's reasoning in balancing the student's learning with the important consideration of whether the student is currently able to safely administer medications to a patient. The issue of balancing student learning with the ability to provide safe care is a recurrent theme in the data and is discussed further in the concept *ethics in teaching* (Jennings, 2017).

Situated knowledge is a form of knowing where knowledge of instruction is contextualized to meet a student's learning needs. In the following excerpt, Althea recognizes a teaching opportunity and uses her situated knowledge of teaching in guiding the student to integrate the nursing process.

> In my teaching I am looking for the nursing process. So you have five fingers [holds up her five fingers] which are going to be the nursing process. This is your assessment data [indicates first finger], your nursing diagnosis [indicates second finger], your nursing outcomes, planning, implementation, and evaluation. Based on what I see you do, based on your report, I think and decide. Do you give me data only and ask me to intervene and tell you what to do, or are you able to move through the process?

Althea used the nursing process model in guiding her to assess the student's knowledge and integration of nursing concepts in their practice. By doing so, Althea guided the student to move from the assessment phase to a phase where the learner can plan appropriate nursing interventions. In some cases, a student could engage in the assessment aspect of the nursing process only, while another student during the same time might have been able to integrate three to four phases of the nursing process. Althea was aware of each student's developing levels of knowledge: each student's ability to make decisions or not related to patient care, each student's progress in the course, as well as the differences in the knowledge and abilities found within the students in the group. Her detailed assessment and knowledge of each student's learning needs guided her in her instruction and enabled her to guide each student through the assessment phase to the more complex decision-making phase of the nursing process model.

Althea has been teaching in the clinical arena for nine years and stated that she developed her knowledge of teaching over time by observing students, seeking their feedback, and reflecting on her actions. She reported that her reflections on her teaching practice enabled her to become more aware and to recognize just-in-time teaching and learning opportunities. This deep and integrated form of knowledge of pedagogy enables educators to recognize patterns of behaviours in their students and make reasoned decisions based on this knowledge.

Similarly, Jessie recognized a teaching opportunity and used her embodied knowledge of instruction in guiding students with their assessment of the newborn.

> The assessment of a newborn is difficult, such as assessing respiratory and heart rate. They would listen and time the breath sounds and then the baby would sneeze, and they would lose track. They [the students] would tell me the respiration is 30. The lab is different from doing it on the real baby. So they need to count the respirations. (Jessie)

Jessie revealed her embodied knowledge of nursing and teaching through performing an examination of the newborn. Jessie quickly moved from using procedural knowledge of examining a newborn to relying more on her bodily knowledge in performing an examination of the baby. Also, Jessie moved seamlessly from recognizing the limits in the students' knowledge of how to examine the baby to instructing the students on how to listen to the baby's heart sounds.

Jessie has taught in the clinical arena for approximately 10 years and reported that her graduate preparation in education studies enabled her to assess, choose, and implement appropriate teaching strategies in a timely manner.

Another facet of instructional knowledge is the notion that this knowledge is specific to a teaching context (Richardson, 1996). In the following excerpt, Sally described her knowledge of instructing students in performing a physical examination of a patient:

> I have each of them do a head-to-toe assessment. Sometimes I interrupt them in the middle of their assessment and say the patient has a scar on their knees, your hand is right there, I think you have something else in your head. Then I give them direction, I stop and coach further and watch their face and see if they are catching it. It is bringing them to a point of recognizing something that I am observing that they should be observing. They need to be drawn to that point. To the student caring for a patient with the scar on the patient's knee that she [the student] wasn't observing. I said what questions are you going to ask the client now? (Sally)

The student seemed unaware of the patient's previous knee surgeries and Sally guided the learner in accurately examining the patient. Furthermore, the student was unaware that a patient with double knee surgery may have difficulty with ambulation, nor did the student know the type of questions to pose to the patient to understand the patient's mobility restrictions. Sally guided the student in developing and posing the questions to the patient. Sally's knowledge of the patient, the patient's medical needs, and the student's learning needs informs her approach. In doing so, Sally encouraged the student to learn more about the person and their response to surgery so that the student can plan appropriate nursing interventions tailored for that patient. Sally used her knowledge and observations to construct her pedagogical response in this situation.

Sally has been teaching in the clinical arena for over eight years and has approximately 30 years of nursing experience. Sally's teaching experience and extensive nursing knowledge helped her navigate the clinical situations that students encounter, assess learners, and construct teaching interventions.

Knowledge of Teaching

In the following excerpt, Paris explains how she prepares and plans course content with her instruction to ensure that students understand and integrate the nursing process model in their practice:

> Based on what are the core foundations they have, what is realistic that you can hook on? Like a Christmas tree. Their tree is like a Charlie Brown Christmas tree. It is not very big and broad. It is very spindly, so you have to say what branches of that Charlie Brown Christmas tree do they have? What concepts and activities can I put on there that is going to stick? Because if you put stuff on there but there are no branches or if the branches are

> too weak, they are going to fall off. It's not about what you know and it's not about doing the job, but it is doing it in a professional way and focusing on a very particular slice.

Paris explains that as she observes and assesses her learners, she customizes her understanding of instruction and the content to meet the learning needs of each group of students.

The participants' multi-layered knowledge of teaching emerged as an important finding in this study and contributes in a significant way to current nursing education literature.

Discussion

Clinical nurse educators need to have a good grasp of many forms of knowledge, such as disciplinary content knowledge, theoretical aspects that underpin teaching and learning, an understanding of how students learn, and knowledge of classroom management to become effective clinical nurse instructors. Boyer (1991) adds that educators must be "well informed and steeped in the knowledge of their fields… [so they can] build bridges between their (teacher's) understanding and the student's learning" (p. 23). Also, clinical nurse educators need to focus on each student's learning needs, the learning needs of the group, and the care that they provide to patients. It is this intersection between learners' needs and the care that they provide to patients that makes teaching in the clinical arena both intricate and multidimensional.

The results revealed varied forms of knowledge in the participants' instructional activities, reasoning, and decision-making processes. In this study, knowledge is understood as "the mental state and activities of teachers" (Fenstermacher, 1994, p. 34). Furthermore, many nurse educators teaching in the classroom are unaware of the varied forms of knowledge used by clinical nurse educators, and this may result in undervaluing both clinical teaching and the contribution made by clinical nurse instructors to student learning in that arena.

The authors have situated the participants' knowledge of pedagogy in the context of teacher education literature because this concept is largely missing in the nursing literature. Most teacher educators acknowledge that teachers use the following three forms of knowledge: factual or propositional knowledge, knowledge of how to do things, and knowledge by acquaintance (Fenstermacher, 1994; Toom, 2012). Cochran-Smith and Lytle (1999) delve further into the forms of knowledge displayed by teachers and provide a framework to examine and explain these forms of knowledge used by teachers in their work.

Cochran-Smith and Lytle (1999) explain teachers' knowledge as knowledge *for* practice, knowledge *in* practice, and knowledge *of* practice. In this study, the authors conceptualize the knowledge portrayed by the participants in their teaching by using the first two forms of knowledge.

Knowledge for Practice

Knowledge for practice is also known as foundational, formal knowledge (Fenstermacher, 1994; Richardson, 1996), or teacher knowledge/formal (Cochran-Smith & Lytle, 1999; Freeman, 2002). This form of knowledge includes a teacher's knowledge of the subject matter, learning theories, pedagogical methods and models, assessment, and classroom management. Knowledge for practice encompasses the knowledge needed for a teacher to perform their work.

Four participants in this study (Jessie, Paris, Adele, and Savannah) received their graduate degrees in education. These four participants were able to easily and clearly articulate

and describe in detail their methods of assessment as well as how and when they assessed students. Also, these participants provided a number of teaching strategies to support students' learning in the clinical arena. Furthermore, they explained how they tailored their teaching to meet the learning needs of individual students and to meet the needs of students across student groups in different undergraduate nursing programs. Formal knowledge of instruction enabled these four participants to bring a high level of comprehension of nursing knowledge to their students, enabled them to speak with conviction and confidence, and convey an appreciation of the contemporary relevance of their subject (Prior, 1965). This has an important implication that nurse administrators should consider when hiring nurse educators.

In addition, these four participants taught in more than one undergraduate nursing program and in more than one school of nursing. These participants were able to compare strengths and weaknesses in each undergraduate nursing curriculum and across nursing programs. They offered insights and recommendations in each program to improve student learning in the clinical arena. On the other hand, participants with graduate degrees in nursing had learned to teach mostly through trial and error.

Learning to teach through trial and error was also reported by other nurse educator researchers. Nurse researchers Cangelosi, Crocker, and Sorrel (2009), Fanutti (1993), Kramer (1996), McDonald (2004), Pauling (2006), Ruby (2000), Walker (2009), and Young (1999) report that most nurse educators are hired for their professional knowledge of nursing and may or may not have knowledge of teaching or teaching experience.

Knowledge in Practice

Knowledge in practice is also known as practical, craft, situated pedagogical knowing (Fenstermacher, 1994; Lytle & Cochran-Smith, 1992; Richardson, 1996; Tirri, Husu, & Kansanen, 1999), tacit or pedagogical content knowledge (Shulman, 1987, 1998), and knowledge in action (Cochran-Smith, 2003; Cochran-Smith & Lytle, 1999). Unlike the former concept, knowledge in practice involves the teacher actively engaging in constructing their knowledge of teaching while performing their work (Cochran-Smith & Lytle, 1999; Clandinin & Connelly, 1987, 1992).

Knowledge in practice includes the "how" and "why" of teaching. One of the main assumptions found in this form of knowledge is that teaching is an "uncertain and spontaneous craft, situated and constructed in response to the particularities of everyday school life" (Cochran-Smith & Lytle, 1999, p. 262). How the teacher tailors their teaching and transforms content depends on the teacher's understanding of the disciplinary content, knowledge of nursing practice, and interpretation of their learners' response to the content and instruction. The assumptions that underpin this form of knowledge are deeply embedded in a constructivist view of the world. In a constructivist view, teachers construct their knowledge of teaching through examining and describing the opportunities and challenges they encounter in their everyday teaching and through reflecting on ways to improve their teaching. These assumptions are a sharp contrast to the assumptions that underpin a traditional approach to pedagogy found in nursing education literature (Benner, 1993; Benner et al., 2010; Diekelmann, 1997, 2004; Ironside, 2004, 2005a, 2005b).

The practical knowledge of teachers is a multifaceted concept with subtle nuances. Six forms of practical knowledge portrayed by participants emerged from the data. They were pedagogical content knowledge, embodied knowledge, situated pedagogical knowledge, tacit

knowledge, experiential knowledge, and reflective knowledge (Jennings, 2017). The first two forms of knowledge are discussed in this section.

Pedagogical Content Knowledge

Shulman (1987) coined the phrase "pedagogical content knowledge" (PCK) in the 1980s and recognized that teachers' wisdom of practice was an important source of knowledge for teachers to draw upon in their teaching. Shulman describes PCK as "the blending of content and pedagogy into an understanding of how particular topics, problems, or issues are organized, represented, and adapted to meet the diverse interests and abilities of learners and presented for instruction" (cited in Cochran-Smith & Lytle, 1999, p. 256). Teachers create this form of knowledge when they transform content into an appropriate representation that facilitates students' understanding. For instance, Paris explains how she tailored her instruction and the content to meet the learning needs of students. Her ability to assess each learner in a timely manner and tailor her instruction to meet the learners' needs denotes her deep understanding of content and pedagogy.

Embodied Knowledge of Teaching

Education scholars Connelly, Clandinin, and He (1997), Clandinin and Connelly (1987, 1992), and Schön (1995) note the importance of embodied knowledge of teaching. Schön (1995) explains embodied knowledge:

> (There is) knowledge implicit in action and artistry—that artistry is a kind of knowing… implicit in our patterns of action and in our feel for the stuff with which we are dealing… the workaday life of the professional practitioner reveals in its recognition, judgment, and skills a pattern of tacit knowing-in-action. (p. 29)

This deep and integrated form of knowledge enables teachers to recognize patterns of behaviours and make reasoned decisions. For instance, Jessie guides the students in their assessment of a newborn baby and in doing so Jessie reveals her knowledge of each student's learning needs and the abilities in the group as well as her own understanding of nursing assessment. Furthermore, Jessie moves effortlessly in her teaching, from assessing the students' needs to instructing them on their examination of the newborn, which further denotes her deep knowledge of pedagogy. Jessie's formal studies in teaching and learning and her teaching and nursing experiences guide and inform her in her teaching practice.

All the above-mentioned forms of knowledge that emerged from the data encompass the participants' knowledge of pedagogy. Pedagogy is understood as a process that begins "with an act of reason, continues with the process of reasoning and culminates in performance of imparting, eliciting, involving… until the process can begin again" (Shulman, 1987, p. 13). Pedagogical reasoning is embedded in the teaching process and, in this study, the pedagogical reasoning of participants is found in their actions and decisions.

Pedagogical reasoning includes comprehension, knowledge transformation, instruction, evaluation, reflection, and new comprehension. The elements are interchangeable and used by teachers to meet the learning needs of students. A teacher could use certain aspects of the approach more frequently, in more pronounced ways, and in a different order. Comprehension is where the teacher understands critically the set of ideas that should be taught and how a given idea relates to other ideas within the same subject and/or to ideas in other subjects (Shulman, 1987). It includes the teacher's ability to transform the content knowledge that they possess into

forms of knowledge that adapt to varied student audiences. Transforming content knowledge includes a number of processes such as the critical interpretation of the texts, representation of the ideas in the form of new analogies, choosing appropriate instructional methods, and adapting to the particular learning needs of students in a specific classroom. In addition, a teacher's values and beliefs guide the individual during this process. Instruction includes the observable performance of a variety of teaching actions, such as organizing and managing students and interacting effectively with students through questions and probes. Evaluation includes checking for understanding or misunderstanding and providing formative and summative feedback.

Pedagogical reasoning includes critical thinking and is defined as the "skillful, responsible thinking that facilitates good judgment" (Henze, 2009, p. 96). Pedagogical reasoning is a complex intellectual process in which competent teachers engage on a regular basis.

Participants with a formal knowledge of teaching made decisions using their knowledge of teaching and not solely depend on their knowledge of nursing. These participants guided their students in a more comprehensive and arguably more effective way. This finding adds new insight to the nursing education literature, as previous research (e.g., Walker, 2005, 2009) had reported that most nurse educators use mainly nursing knowledge to make decisions in their teaching practice.

Pedagogical Reasoning and Decision-making

The clinical nurse educator's decision-making processes are a recurrent theme throughout the data. Participants were aware of each student's knowledge, abilities, and areas of improvement and considered the severity of the patient's medical condition prior to assigning each student to a particular case—all in a timely manner.

The data revealed that participants' decisions varied from simple to complex, according to the situation and contextual circumstances. In some cases, participants had time to think while at other times they needed to make a well-informed decision within a short time frame. In deciding, participants needed to consider the many options available in each situation. Specifically, participants needed to critically evaluate each option, anticipate the potential outcome of each option, and examine their reasoning for choosing a particular option before implementing their teaching intervention. The decision-making process is complex and participants were required to make such decisions on a regular and consistent basis.

Cochran-Smith and Lytle (1999) report that the knowledge that teachers use in their work is manifested in their actions and decisions and is generated from the work of experienced teachers. These authors explain how seasoned teachers create their knowledge of pedagogy in the midst of uncertainty and immediacy; they add that teachers need support in order to examine and articulate this knowledge found in their practice.

From the data, two groups of participants emerged: seasoned and new clinical educators. Four of the seasoned participants had formal knowledge of teaching and learning and all had over 10 years of teaching experience. In contrast, none of the new clinical instructors had received formal education in teaching and had taught in the clinical arena for approximately 3 to 6 years. The authors found that seasoned participants were more aware of each student's knowledge, abilities, and areas of improvement. These participants described in detail how they could accurately place students with their patients as well as plan and organize their time efficiently in order to spend adequate time with each of the eight students in the group. This, in

turn, allowed them to guide each student in their learning and give each student the opportunity to learn, practice, and integrate new knowledge. These participants made sense of new situations by finding similarities and parallels that they could connect to previous events and to a variety of other information, thus contextualizing the learning experiences for their students (Schön, 1995). Also, these participants were more adept at creating and developing their pedagogical responses in a timely manner.

The seasoned clinical nurse educator participants were more adept at making complex decisions in their teaching practice. However, teaching experience alone does not ensure effective teaching or good decision-making, and nurse educators with additional formal knowledge of teaching create their knowledge of teaching in a more systematic manner and, arguably, teach more effectively. Nurse administrators should consider this result particularly in their hiring of clinical nurse instructors.

Participants mentioned six factors that hindered them from making a considered decision. The first and most problematic factor was the number of students in each clinical group. Participants reported that having eight students in a group was difficult as they had to simultaneously consider each student's learning needs and consider the context in a timely manner within busy nursing units. The other five factors that hindered the participants in making good decisions were noted as (1) the increasing acuity (illness) and complexity (multiple medical conditions) of the patients; (2) the lack of adequate student preparation to care for patients with complex needs; (3) the decrease in the patients' length of stay in the hospitals, which resulted in participants having to make new student assignments more frequently; (4) the participants' lack of knowledge or understanding of the curriculum and overall program; and (5) the lack of support from the academic institution.

Limitations of the Study

The main limitation of this study relates to data collection methods. In this study, the authors used interviews as the main data source as she was unable to observe participants teaching in the clinical arena due to organizational constraints. Observing participants in their actual teaching practice would allow nurse researchers to gain a more in-depth and comprehensive understanding of the complexity involved in teaching in the clinical arena.

Conclusion

The results from this study provide a deeper and broader understanding of teaching in the clinical arena and shed light on the contribution of clinical nurse educators when preparing students in their transition to becoming nurses. The results also showcase the importance of graduate preparation in education for nurse educators to improve curricula development and pedagogy in their delivery of nursing education.

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